

JESSOP STEEL COMPANY — WASHINGTON, PENNSYLVANIA 15301

MATERIAL SAFETY DATA SHEET

SECTION I

Date: September 1, 1989
Supersedes MSDS Dated: 2/3/86

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| MANUFACTURER'S NAME JESSOP STEEL COMPANY | | EMERGENCY TELEPHONE NO. (412) 222-4000 |
| ADDRESS (NUMBER, STREET, CITY, STATE & ZIP CODE) 500 Green Street, Washington, Pennsylvania 15301 | | |
| PRODUCT NAME: Stainless Steels | | CHEMICAL FAMILY Steel |
| GRADES Austenitic, Ferritic, Martensitic, Duplex and Precipitation Hardening | | |
| Stainless Steels. | | |
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SECTION II - CHEMICAL COMPONENTS

| | C.A.S. NUMBER | RANGE % | ACGIH TLV | OSHA PEL |
|------------------------------------|---------------|---------|-----------------------|-----------------------|
| Iron (limits for iron oxide fumes) | 1309-37-1 | 40-89 | 5 mg/m ³ | 10 mg/m ³ |
| Nickel | 7440-02-0 | 0-37 | 1 mg/m ³ | 1 mg/m ³ |
| Chromium | 7440-47-3 | 10-27 | 0.5 mg/m ³ | 1 mg/m ³ |
| Manganese (limits for dust) | 7439-96-5 | 0-16 | 5 mg/m ³ | 5 mg/m ³ |
| (limits for fume) | | | 1 mg/m ³ | 1 mg/m ³ |
| Molybdenum (limits for dust) | 7439-98-7 | 0-5 | 10 mg/m ³ | 10 mg/m ³ |
| Copper (limits for fume) | 7440-50-8 | 0-5 | 0.2 mg/m ³ | 0.1 mg/m ³ |
| Silicon (limits for dust) | 7440-21-3 | 0-3 | 10 mg/m ³ | 10 mg/m ³ |
| Tungsten | 7440-33-7 | 0-2 | 5 mg/m ³ | 5 mg/m ³ |
| Aluminum (limits for dust) | 7429-90-5 | 0-2 | 10 mg/m ³ | 15 mg/m ³ |
| (limits for welding fumes) | | | 5 mg/m ³ | 5 mg/m ³ |
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SECTION III - PHYSICAL DATA

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| BOILING POINT (°F.) | N/A | SPECIFIC GRAVITY (H ₂ O = 1) | 8 |
| VAPOR PRESSURE (MM HG.) | N/A | PERCENT VOLATILE BY VOLUME (%) | N/A |
| VAPOR DENSITY (AIR = 1) | N/A | EVAPORATION RATE (_____ = 1) | N/A |
| SOLUBILITY IN WATER | N/A | MELTING POINT | 2600-2800°F |
| APPEARANCE & ODOR | Metallic and odorless solid | | |

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

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|--|-----------------|------------------|-----|-----|-----|
| FLASH POINT (METHOD USED) | N/A | FLAMMABLE LIMITS | N/A | LEL | UEL |
| EXTINGUISHING MEDIA | N/A | | | | |
| SPECIAL FIRE FIGHTING PROCEDURES | N/A | | | | |
| Unusual Fire Explosion Hazards | N/A | | | | |
| National Fire Protection Association Rating (NFPA) | | | | | |
| Health: 2 | Flammability: 0 | Reactivity: 0 | | | |

USEPA SF



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SECTION V - HEALTH HAZARD DATA

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|---|--|---------------------------------------|--|------------------------------------|
| (X) MAJOR EXPOSURE HAZARD: | INHALATION <input checked="" type="checkbox"/> | SKIN CONTACT <input type="checkbox"/> | SKIN ABSORPTION <input type="checkbox"/> | INGESTION <input type="checkbox"/> |
| NOTE: Steel products in the natural state do not present an inhalation, injection, or contact hazard. However, operations such as burning, welding, sawing, brazing, or grinding may result in the following effects if exposures exceed permissible limits: Symptoms: ACUTE: Excessive inhalation of fumes from many metals can produce an acute reaction known as "metal fume fever." Symptoms consist of chills and fever (very similar to and easily confused with flu symptoms) which come on a few hours after exposure. Dermatitis due to sensitization may occur in some individuals. CHRONIC: Excessive and repeated overexposure of nickel and chromium can cause various forms of dermatitis, inflammation and/or ulceration of upper respiratory tract. Both chromium and nickel have been associated with upper respiratory cancer. Excessive and repeated overexposure of iron fumes can cause siderosis. Excessive and prolonged inhalation of manganese fumes can cause bronchitis, pneumonitis, lack of coordination. Copper - pulmonary effects. | | | | |
| EMERGENCY FIRST AID PROCEDURES In case of excessive exposure, remove to fresh air, administer oxygen and seek physician's assistance. | | | | |

SECTION VI - REACTIVITY DATA

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| STABLE <input checked="" type="checkbox"/> | UNSTABLE <input type="checkbox"/> | CONDITIONS TO AVOID N/A |
| INCOMPATIBILITY (MATERIALS TO AVOID) N/A | | |
| DECOMPOSITION PRODUCTS N/A | | |
| HAZARDOUS POLYMERIZATION | MAY OCCUR <input type="checkbox"/> | CONDITIONS TO AVOID |
| | WILL NOT OCCUR <input checked="" type="checkbox"/> | |

SECTION VII - SPILL OR LEAK PROCEDURES

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| STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED | N/A |
| WASTE DISPOSAL METHOD Dispose of in accordance with applicable federal, state and local regulations. | |
| PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE N/A | |

SECTION VIII - PERSONNEL PROTECTION INFORMATION

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| RESPIRATORY PROTECTION | For welding, burning, grinding, and cutting operations, local exhaust ventilation should be provided. If fumes or dusts cannot be controlled with exhaust ventilation, an appropriate NIOSH-approved respirator should be used to prevent excessive inhalation exposure. |
| GLOVES | Gloves may be necessary to prevent skin sensitization and dermatitis. |
| EYE PROTECTION | Approved safety glasses or goggles should be worn when working with dusty metals. |

PREPARED BY:

Jessop Steel Company

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